

Appl. No. 09/975,682  
Amdt. dated June 1, 2006  
Reply to Office Action of February 15, 2006

Remarks

The present amendment responds to the Official Action dated February 15, 2006. A petition for a one month extension of time to respond and authorization to charge Deposit Account No. 50-1058 the large entity extension fee of \$120 accompany this amendment. The Examiner rejected claims 1-3, 6, 8, 9, 11, and 23 under 35 U.S.C. § 102(e) based on Nordstrom et al. U.S. Patent Application Publication No. 2001/0004383 (Nordstrom). Claims 4, 5, and 14-17 were rejected under 35 U.S.C. § 103(a) based on Nordstrom in view of Timm et al. U.S. Patent No. 6,055,268 (Timm). Claim 15 was rejected under 35 U.S.C. § 103(a) based on Nordstrom. Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) based on Nordstrom in view of Schneider et al. U. S. Patent No. 6,314,135 (Schneider). Claims 7 and 18 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. These grounds of rejection are addressed below.

Claims 10 and 19-22 were previously canceled. Claims 6, 8, 12, 14-18 have been canceled without prejudice.

Claims 1, 2, 7, 11, 13, and 23 have been amended to be more clear and distinct and new claims 24-33 have been added. Claims 1-5, 7, 9, 11, 13, 23-33 are presently pending.

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### Amendments to the Specification

The specification has been amended in the paragraph beginning at page 8, line 7 to correct a typographical error in the subscripts of the numerator term for equation 7. The equation

$$\left\{ P_{21}(f) = \frac{-H_{11}(f)}{H_{11}(f)} \right\} \text{ was thereby corrected to } \left\{ P_{21}(f) = \frac{-H_{21}(f)}{H_{11}(f)} \right\}.$$

### The Art Rejections

As addressed in greater detail below, Nordstrom, Timm, and Schneider do not support the Official Action's reading of them and the rejections based thereupon should be reconsidered and withdrawn. Further, the Applicants do not acquiesce in the analysis of Nordstrom, Timm, and Schneider made by the Official Action and respectfully traverse the Official Action's analysis underlying its rejections.

Nordstrom relates to a far-end cancellation circuit for a transmission system. Nordstrom uses a precompensation matrix to precompensate transmission signals prior to transmission. The precompensation matrix is estimated from transmissions by a least mean square method to determine an error signal and return the error signal for use in updating the coefficients of the precompensation matrix. Nordstrom, Abstract and paragraphs [0035], [0036], and [0037].

In contrast to Nordstrom, the present invention reduces cross-talk in a communication system. Training data signals are processed in a transmitter utilizing an initial pre-coding matrix to produce a first pre-coded training signal. The first pre-coded training signal is transmitted to a first communication channel. The transmitter receives from the first communication channel matrix updating information that was computed at a receiver on the other end of the first

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communication channel. The matrix updating information having been computed utilizing the transmitted first pre-coded training signal and a second pre-coding matrix located at the receiver. The transmitter updates the initial pre-coding matrix based on the matrix updating information.

Amended claim 1 reads as follows:

Method for reducing cross-talk in a communication system comprising a plurality of transmitters for transmitting encoded data signals via respective communications channels to a plurality of receivers and receiving back matrix updating information, said method comprising the steps of:

- processing training data signals in a transmitter utilizing an initial pre-coding matrix to produce a first pre-coded training signal;
- transmitting said first pre-coded training signal on a first communication channel;
- receiving from the first communication channel the matrix updating information computed at a receiver on the other end of the first communication channel, the matrix updating information having been computed utilizing the transmitted first pre-coded training signal and a second pre-coding matrix located at the receiver; and
- updating said initial pre-coding matrix based on said matrix updating information, whereby said updating tends to offset channel impairments within said first communication channel.

Nordstrom does not process training data signals in a transmitter utilizing an initial pre-coding matrix to produce a first pre-coded training signal. Nordstrom does not transmit the first pre-coded training signal to a first communication channel. Nordstrom does not receive matrix updating information from the first communication channel. The matrix updating information computed at a receiver on the other end of the first communication channel utilizing the transmitted first pre-coding training signal and a second pre-coding matrix located at the receiver. Nordstrom also does not update said initial pre-coding matrix based on said matrix updating information. Nothing in Nordstrom teaches or makes obvious methods or an apparatus as

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presently claimed. The claims are not taught, are not inherent, and are not obvious in light of Nordstrom.

Since dependent claims 2-5, 7, 9, 11, and 13 depend from and contain all the limitations of the amended claim 1, claims 2-5, 7, 9, 11, and 13 distinguish from the reference in the same manner as claim 1 and place claims 2-5, 7, 9, 11, and 13 in order for allowance.

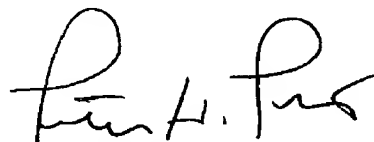
Method claim 14 has been canceled without prejudice making the rejection moot.

Apparatus claim 23 has been amended in a similar fashion to the amendment to claim 1 placing it in order for allowance.

#### Conclusion

All of the presently pending claims, as amended, appearing to define over the applied references, withdrawal of the present rejection and prompt allowance are requested.

Respectfully submitted,



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